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(54) **Vibration reduction apparatus for power tool and power tool incorporating such apparatus**

(57) A vibration reduction apparatus 501 for use with a hammer tool having a hammer piston 520 is shown. The hammer piston 520 is caused to reciprocate in cylinder 530 by rotation of a gear wheel 523 about axis 524, the hammer piston 520 being mounted to the gear wheel 523 via piston arm 531 and pivot pin 522. Reciprocating motion of the hammer piston causes a flying mass 569 to be driven along cylinder 530 to impart a hammer action to a bit of the tool. The gear wheel 523 is caused to rotate about axis 524 by meshing of gear 514 on drive shaft 511 with gear teeth 532 on the periphery of gear wheel 523, the drive shaft 511 being caused to rotate by a motor (not shown) of the tool. a cam 533 is rigidly mounted around gear wheel 523, a counterweight 521 surrounds piston cylinder 530, and a cam follower 534 is provided on counterweight 521. The cam follower 534 on counterweight 521 is urged into contact with cam 533 by means of a compression spring 535. The external profile of the cam 533 is such that rotation of gear wheel 534 cause reciprocating motion of hammer piston 520 causes oscillation of counterweight 521 relative to piston cylinder 530 in antiphase to motion of the hammer piston 520 to counteract vibrations produced by operation of the hammer action of the tool..

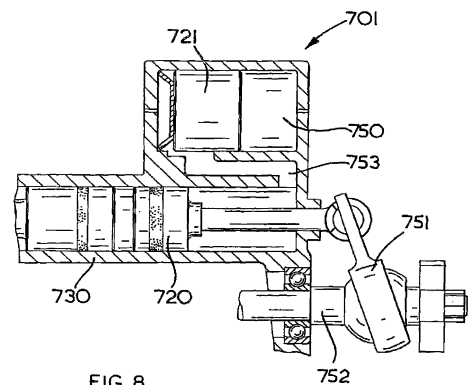


FIG. 8



EUROPEAN SEARCH REPORT

Application Number  
EP 07 10 2225

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 November 2013	Examiner Rabolini, Marco
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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28-11-2013

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82